

IN THE CLAIMS:

Please write the claims to read as follows:

- 1 1. (Original): A method for load balancing a plurality of servers, the method compris-
2 ing:
 - 3 providing a plurality of control blocks, each control block associated with a num-
4 ber of active connections a server is connected with, the control block configured to con-
5 trol at least one server with the associated number of connections in a server list;
 - 6 causing each control block to point to a server with a least value ascertained by
7 determining the number of connections on the server relative to the server's capacity to
8 handle connections;
 - 9 selecting the control block associated with the least number of connections; and
10 selecting the server pointed to by the control block.
- 1 2. (Original): The method as in claim 1, wherein ascertaining the least value for the
2 server comprises:
 - 3 determining a metric of the server by dividing the number of connections on the
4 server by the capacity of the server, wherein the metric is kept as a quotient/remainder
5 pair;
 - 6 storing the quotient/remainder pair in the control block;
 - 7 incrementing the remainder by one for every connection added to the server; and
8 decrementing the remainder by one for every connection removed from the
9 server.
- 1 3. (Original): The method as in claim 1, further comprising:

2 causing the control block with the server having an added/removed connection to
3 transfer the server to an adjacent control block, wherein the adjacent control block is as-
4 sociated with the number of connections pertaining to the transferring server;

5 causing the control block to transfer the metric of the server to the adjacent con-
6 trol block; and

7 updating the pointer to point to the next server on the list of the control block.

1 4. (Original): The method as in claim 3, further comprising:

2 removing the control block if the control block does not have a server on the
3 server list.

1 5. (Original): The method as in claim 3, further comprising:

2 causing the adjacent control block to receive the transferring server;

3 causing the adjacent control block to receive the metric of the transferring server;
4 and

5 causing the adjacent control block to update and sort the server list.

1 6. (Original): The method as in claim 5, further comprising:

2 adding a control block if there is no control block associated with the number of
3 connections of the transferring server.

1 7. (Original): A processor executable medium which when executed by a processor per-
2 forms a method for load balancing a plurality of servers, the method comprising:

3 providing a plurality of control blocks, each control block associated with a num-
4 ber of active connections a server is connected with, the control block configured to con-
5 trol at least one server with the associated number of connections in a server list;

6 causing each control block to point to a server with a least value ascertained by
7 determining the number of connections on the server relative to the server's capacity to
8 handle connections;

9 selecting the control block associated with the least number of connections; and

10 selecting the server pointed to by the control block.

1 8. (Original): The processor executable medium as in claim 7, wherein ascertaining the
2 least value for the server comprises:

3 determining a metric of the server by dividing the number of connections on the
4 server by the capacity of the server, wherein the metric is kept as a quotient/remainder
5 pair;

6 storing the quotient/remainder pair in the control block;

7 incrementing the remainder by one for every connection added to the server; and

8 decrementing the remainder by one for every connection removed from the
9 server.

1 9. (Original): The processor executable medium as in claim 7, further comprising:

2 causing the control block with the server having an added/removed connection to
3 transfer the server to an adjacent control block, wherein the adjacent control block is as-
4 sociated with the number of connections pertaining to the transferring server;

5 causing the control block to transfer the metric of the server to the adjacent con-
6 trol block; and

7 updating the pointer to point to the next server on the list of the control block.

1 10. (Original): The processor executable medium as in claim 9, further comprising:

2 removing the control block if the control block does not have a server on the
3 server list.

1 11. (Original): The processor executable medium as in claim 9, further comprising:

2 causing the adjacent control block to receive the transferring server;

3 causing the adjacent control block to receive the metric of the transferring server;

4 and

5 causing the adjacent control block to update and sort the server list.

1 12. (Original): The processor executable medium as in claim 11, further comprising:

2 adding a control block if there is no control block associated with the number of
3 connections of the transferring server.

1 13. (Original): A load balancing apparatus comprising:

2 a plurality of control blocks, each control block associated with a number of ac-
3 tive connections a server is connected with, the control block configured to control at
4 least one server with the associated number of connections;

5 a pointer in each control block that points to a server with a least value ascer-
6 tained by determining the number of connections on the server relative to the server's ca-
7 pacity to handle connections; and

8 a selection circuit that selects the control block associated with the least number
9 of connections and further selects the server pointed to by the control block.

1 14. (Currently Amended): The load balancing apparatus as in claim 13, further com-
2 prising:

3 ~~The~~the control block configured to determine a metric of the server, wherein the
4 metric is kept as a quotient/remainder pair;

5 a memory to store the quotient/remainder pair determined by the control block;

6 the control block further configured to increment the remainder by one for every
7 connection added to the server; and

8 the control block further configured to decrement the remainder by one for every
9 connection removed from the server.

1 15. (Original): The load balancing apparatus as in claim 13, further comprising:

2 the control block configured to transfer the server having an added/removed con-
3 nection to an adjacent control block, wherein the adjacent control block is associated with
4 the number of connections pertaining to the transferring server;

5 the control block further configured to transfer the metric of the server to the ad-
6 jacent control block; and

7 the control block configured to update the pointer to point to the next server on
8 the list of the control block.

1 16. (Original): The load balancing apparatus as in claim 15 further comprises:

2 the control block is de-activated if the control block does not have a server on the
3 server list.

1 17. (Original): The load balancing apparatus as in claim 15, further comprises:
2 the adjacent control block configured to receive the transferring server; and
3 the adjacent control block further configured to receive the metric of the transfer-
4 ring server, wherein the adjacent control block updates and sorts the server list.

1 18. (Original): The load balancing apparatus as in claim 17, further comprises:
2 a control block that is activated to receive the transferring server if there is no
3 control block associated with the number of connections of the transferring server and the
4 control block is associated with the number of connections of the transferring server.

Please insert the following new claims 19 *et seq.*:

1 19. (New): An apparatus for load balancing a plurality of servers, the apparatus com-
2 prising:

3 means for providing a plurality of control blocks, each control block associated
4 with a number of active connections a server is connected with, the control block config-
5 ured to control at least one server with the associated number of connections in a server
6 list;

7 means for causing each control block to point to a server with a least value ascer-
8 tained by determining the number of connections on the server relative to the server's ca-
9 pacity to handle connections;

10 means for selecting the control block associated with the least number of connec-
11 tions; and

12 means for selecting the server pointed to by the control block.

1 20. (New): A method for load balancing a plurality of servers, the method comprising:

2 associating each of the plurality of servers with one of one or more control blocks,
3 each control block representing a number of connections of the associated servers;

4 pointing, within each control block, to a server with a least value, the value based
5 on the number of connections on the server relative to an assigned weight of each server;

6 selecting the control block associated with the least number of connections; and

7 selecting the server pointed to by the control block.

1 21. (New): The method as in claim 20, wherein the assigned weight represents a server's
2 capacity to handle connections.

1 22. (New): The method as in claim 20, wherein the value is based on:

2 determining a metric of the server by dividing the number of connections on the
3 server by the assigned weight of the server, wherein the metric is kept as a quo-
4 tient/remainder pair;

5 storing the quotient/remainder pair in the control block;

6 incrementing the remainder by one for every connection added to the server; and

7 decrementing the remainder by one for every connection removed from the
8 server.

1 23. (New): A system for load balancing a plurality of servers, the system comprising:

2 one or more clients to send client requests; and

3 a virtual server to receive and process the client requests, the virtual server hav-
4 ing,

5 A) a plurality of real servers, and

6 B) a load balancing apparatus to receive the client requests and load bal-
7 ance the client requests among the plurality of real servers, the load balancing ap-
8 paratus further having,

9 i) one or more control blocks, each of the plurality of real servers
10 associated with one of one or more control blocks, each control block rep-
11 resenting a number of connections of the associated servers,

12 ii) a pointer within each control block that points to a server with a
13 least value, the value based on the number of connections on the server
14 relative to an assigned weight of each server, and

15 iii) a selection circuit that selects the control block associated with
16 the least number of connections and further selects the server pointed to by
17 the control block.